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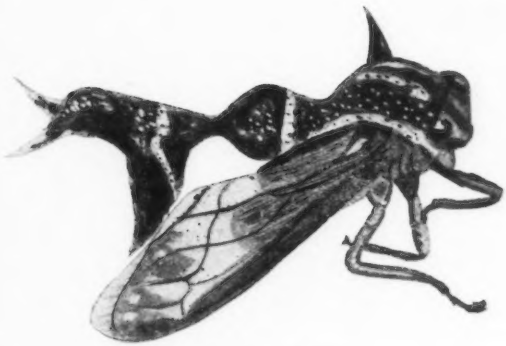
ENTOMOLOGICAL NEWS



Heteronotus vulnerans.

APRIL, 1903.

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Ernest Swinhoe, 37 Addison Gardens, London W., England

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ENTOMOLOGICAL NEWS

AND

PROCEEDINGS OF THE ENTOMOLOGICAL SECTION

ACADEMY OF NATURAL SCIENCES, PHILADELPHIA.

VOL. XIV. APRIL, 1903. No. 4.

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Synopsis of Sphecodinae.

BY CHARLES ROBERTSON, Carlinville, Illinois.

This paper belongs with one on Andreninae, in Trans. Am. Ent. Soc., xxviii, 187-194, June, 1902, and another on Halictinæ, in Can. Ent., xxxiv, 245-250, Sept., 1902, intended to put the results of my studies of the local bees in a more convenient and definite form.

The species of this group fall into several generic divisions. In the group of larger species, in which the male has the fourth joint of the antennæ long, the majority agree fairly well in structure with *Sphecodes gibbus*, which I regard as the type, and are referred to the same genus. *S. falcifer* Pttn. is made the type of the new genus *Drepanium* on account of the simple mandibles of the female. *S. ranunculi* Rob. is proposed as the type of the new genus *Proteraner*. The male has the abdomen broadly rounded at apex and entirely red, except sometimes at the base. It differs from all of the other species, and from all of the Halictinæ, from the fact that the male appears in spring with the female.

In the second group, in which the male has the fourth joint

of the antennæ hardly longer than the third, the species whose females have the mandibles dentate are referred to the new genus *Stelidium*, with *S. cressonii* sp. nov. as the type, and those with simple mandibles are referred to *Machæris* gn. nov., type *S. stygius* having the vein *rm* present and the clypeus convex, and *Dialonia* gn. nov., type *S. antennariæ*, having that vein absent and the clypeus flat or a little concave.

In the paper on Andreninae, cited above, I have mentioned thirteen species in which I have found the vein III_5 wanting. I neglected to mention the absence of vein *rm* in one wing of a single specimen of *Trachandrena claytoniae*. In the Sphecodinæ, on the other hand, I have found the vein *rm* absent in thirteen specimens of the following species: *S. falcifer* (1), *pimpinellæ* (3), *cressonii* (2), *stygius* (2), *antennariæ* (5). One of the last has the vein III_5 wanting in one wing and is the only example with that vein absent.

Sphecodium cressonii is the insect I have identified as *S. mandibularis*. Specimens sent to Mr. Cresson were determined as *Sphecodes* sp., from which it is evident that he did not regard the species as *S. mandibularis*. The structure of the mandibles of that species is unknown. *Machæris illinoensis* is based on a specimen with simple mandibles described as a cotype of *S. pycnanthemi*. The males of *S. heraclei*, *pimpinellæ* and *antennariæ* are here described for the first time. The male of *S. arvensis*, described as "entirely black, antennæ submoniliform" and *S. falcifer*, described as "entirely black" are here characterized for the first time.

S. dichrous Sm. is probably based on the female of *S. arvensis* Pttn. and the male of some other species, and *S. confertus* Say may be the same as *S. falcifer* Pttn., but at present I prefer to use Patton's names.

In this paper cell III_5=second cubital cell; vein *rm*=the first transverse cubital nervure; vein III_5=the second transverse cubital nervure; "joint" refers to antenna, "segment" refers to abdomen; "enclosure"=the enclosed space on the disc of metathorax.

In my opinion these bees are inquilines of the Halictinæ and

the genera here recognized will be found to infest the nests of different genera of that subfamily.

FEMALES.

Mandibles yellowish or reddish, the tip darker ; small or middle sized, 3.
Mandibles rufous, base usually largely black ; large or middle sized, 1.

1. Mandibles simple ; labrum long, strongly notched ; mesonotum closely punctured ; segments 4–5 more or less black ; vein *rm*. short **Drepanium falciferum.**

Mandibles dentate ; labrum short, rounded or truncate . . . . . 2.

2. Joint 4=2+3, or nearly ; abdomen narrow, evenly, coarsely, distinctly punctured, entirely red, segment 5=4, or longer ; clypeus finely and densely punctured : mesonotum coarsely and closely punctured ; cell III_5 strongly narrowed above. **Proteraner ranunculi.**

3. Mandibles dentate. . . . . **Sphecodium.**
Mandibles simple . . . . . 4.

4. Vein *rm* wanting ; clypeus short, flat ; mandibles long ; mesonotum shining, greenish, finely and sparsely punctured ; metathorax short, enclosure poorly defined, with longitudinal raised lines. **Dialonia antennariæ.**

Vein *rm* present ; clypeus longer, more convex . . . . . **Machaeris.**

MALES.

Joint 4 longer than 2+3, which are equal ; abdomen red, except sometimes at base, apex broadly rounded . . **Proteraner ranunculi.**
Joint 4 hardly longer than 3 . . . . . 2.
Joint 4 about equals 2+3 . . . . . 1.

1. Joint 3 twice as long as 2 ; flagellum notched beneath towards apex ; mesonotum closely punctured ; mandibles red ; vein *rm* short; abdomen black, segment 7 red, at least at apex. **Drepanium falciferum.**

Joint 3 not twice as long as 2 ; vein *rm* little shorter than III_5. **Sphecodes.**

2. Clypeus ; vein *rm* wanting ; metathorax smooth, shining, with some longitudinal raised lines . . . . . **Dialonia antennariæ.**
Clypeus convex ; vein *rm* usually present. . **Sphecodium** or **Machæris.**

SPHECODES Latr.

FEMALES.

Vertex with a distinct tubercle ; mesonotum closely and coarsely punctured ; abdomen finely and sparsely punctured, segments 4–5 black. . . . . **heraclei.**
Vertex ordinary . . . . . 1.

1. Abdomen rather evenly, coarsely and distinctly punctured, segment 5 more or less black; clypeus and mesonotum sparsely punctured, the former a little more coarsely; cell III_5 short, its sides parallel . . . . . **arvensis.**

Abdomen, at least segment 1, impunctate or nearly so . . . . . 2.

2. Mesonotum shining, sparsely punctured, not sulcate, sometimes with a median raised line; abdomen entirely red, almost impunctate . . . . . **minor.**

Mesonotum less shining, more closely punctured, strongly sulcate; segment 5 black, 2–5 rather distinctly punctured basally. **clematidis.**

MALES.

Flagellum submoniliform, without distinct facets beneath; abdomen red, segments 3–6 more or less black . . . . . **clematidis.**

Flagellum with joints 4-13 notched beneath and presenting distinct facets; abdomen entirely black . . . . . 1.

1. Vertex with a distinct tubercle; mesonotum with coarse confluent punctures; abdomen more shining, less closely punctured, apex thinly pubescent . . . . . **heraclei.**

Vertex ordinary; mesonotum with punctures less coarse, more distinct; abdomen more opaque, more closely punctured, more closely pubescent . . . . . **arvensis.**

SPHECODIUM.

FEMALES.

Flagellum, mandibles, tibiæ, tarsi and abdomen red; head and mesonotum closely and finely punctured; cell III_5 very short; enclosure short, semicircular . . . . . **pimpinellæ.**

Flagellum, tibiæ and tarsi darker . . . . . 1.

1. Enclosure distinct, coarsely reticulated; labrum entire; mesonotum usually greenish, shining; segments 4-5 usually black. **cressonii** sp. nov.

Enclosure short, poorly defined, with longitudinal raised lines; labrum more or less emarginate; mesonotum black . . . . 2.

2. Abdomen entirely black; slender . . . . . **smilacinæ.**

Abdomen red, except segments 4-5; robust . . . . . **pycnanthemi.**

MALES.

Enclosure short; scutel closely punctured, rather opaque; abdomen without red; vein *rm* wanting in known specimens . . . **pimpinellæ.**

Enclosure longer; scutel sparsely punctured, shining; abdomen more or less reddish; fresh specimens compared with *Machæris stygia* have the pubescence longer, whiter, more dense, especially on clypeus; antennæ, tegulæ, nervures and reddish color of abdomen, when present, paler; mesonotum anteriorly, pleura and metathorax less coarsely reticulated . . . . . **cressoini.**

MACHÆRIS.

FEMALES.

Head rather coarsely and closely punctured; enclosure distinct, coarsely reticulated; segments 4-5 usually black . . . . . **stygia.**

Head rather finely and sparsely punctured; metathorax short, enclosure poorly defined, with longitudinal lines; robust.

illinoensis sp. nov.

MALES.

Resembles the male of *S. cressonii*; the pubescence shorter, more cinereous, thinner, especially on clypeus; antennæ, tegulæ, nervures and reddish color of abdomen, when present, darker; mesonotum anteriorly, pleura and metathorax more coarsely reticulated . . . . . **stygia.**

Two New Species of the Family Pipunculidae.

By C. W. Johnson.

Pipunculus pallipes, n. sp.

♂. Face and front black; autennæ brown, aristæ black. Thorax and scutellum bronze-black, shining; humeri dull yellow; pleura and metanotum black, covered with a grayish pubescence. Abdomen ovate, shining bronze-black, with the sides of the second, third and fourth segments yellow, which on the second segment is nearly double in extent to that on the two following segments: first segment gray, opaque; ventral surface of the second, third and fourth segments entirely yellow. Legs and halteres light yellow, the two last joints of the tarsi brown. Wings long, hyaline, stigma brown. Length 3½ mm., length of wing 4 mm.

Wildwood, N. J., August 27, 1901.

This resembles *P. lateralis* Macq., by the light yellow, not annulated legs and greater extent of yellow on the sides of the abdomen. The latter character distinguishes this species from all described American species.

I might here state that *Pipunculus houghi* Johnson in the Catalogue of Insects of New Jersey, p. 665, is only a *nomina nuda*, an accident happening to the specimen before it was described. Later Dr. C. Kertesz (Wiener Entom. Zeitung, XIX, 244, Nov., 1900) has applied the same name to *P. lateralis* Walker 1856, *non* Macquart 1834.

Nephrocerus daeckei, n. sp.

♂. Face and front black, covered with a silvery white pubescence;

occiput with white pubescence and hairs; antennæ entirely light yellow, aristæ black. Dorsal portion of the thorax a shining black; humeri, lateral margins, pleura and scutellum, light yellow; the anterior portion of the thorax, in certain light, shows a whitish sheen; a pair of bristles on the ante-alar and post-alar callosities, and four on the scutellum. Abdomen black, shining; the posterior edge of the second and third segments narrowly margined with yellow; a small yellow spot bearing a tuft of black bristles on the sides of the first segment, the remaining segments with more or less prominent hairs and bristles, especially along the sides of the posterior margins; genital portions dark yellow; halteres yellow, the knobs narrowly margined with brown above. Legs light yellow. Wings hyaline, with a very slight brownish tinge. Length, 6 mm.

Two specimens, Richmond Hill, Long Island, N. Y., July 2, 1901.

This species is dedicated to my friend Mr. Erich Daecke. The genus was recorded (but the species not described) by Mr. Coquillett in Mrs. Slosson's "Additional List of Insects Taken in Alpine Regions of Mt. Washington" (Entom. News, Nov., 1897, p. 239). The specimen was submitted to Mr. Coquillett who pronounced it a different species, and also stated that he had another specimen collected by Mrs. Slosson at Franconia, N. H., which is identical. It differs from the European *N. flavicornis* Zett. in having the aristæ entirely black, and only the second and third segments of the abdomen banded with yellow; from *N. scutellatus* Macq. in having the third joint of the antennæ large and bright yellow, not small and brown, while the latter has five of its abdominal segments banded with yellow.

How Shall We Arrange Our Collections?

By H. T. Fernald, Amherst, Mass.

This question has always been one which has caused much trouble. Before the work of Darwin made itself felt, it was, perhaps, of less importance, but with the development of the idea of descent as applied to all animal life, the problem of such an arrangement as should represent the varous stages of evolution of the insects has become prominent. Formerly every one expected to find the first tray of a collection devoted to Apoid

Hymenoptera, followed by the other members of that group; but what order would next appear as the trays were pulled out was largely a matter of chance and the influence which various manuals of entomology had upon the owner.

The influence of evolution upon science has perhaps nowhere been more marked than in entomology, as may be seen by comparing an early edition of Packard's "Guide" with Comstock's "Manual." And in the presentation of the subject to students it is now practically universal to pass from the simple to the complex—from the generalized to the more highly specialized groups.

The result of this influence has also been felt in the arrangement of collections of insects where the first boxes or trays now almost always contain the *Apterygota*, followed by such groups as the *Ephemerida*, etc., while we turn to the last of the series to find the Hymenoptera.

When we examine the arrangement of insects within the different groups, however, we find that the change is but superficial, for in nine collections out of every ten the Lepidoptera begin with the butterfles instead of the Micropterygoidea (Jugatæ) or lower Frenatæ, and the series of Hymenoptera is introduced by the bees instead of being closed by them.

The cause for this is not far to seek. Evolution has reached the orders, but has not as yet led the makers of the check-lists to revise their sequence of names, and as we all use check-lists by which to arrange insects, the result is merely confusion confounded.

That this will remain the case till check-list makers gather courage sufficient to begin their lists with the most generalized (primitive) insects of a group and work towards the most specialized forms is evident, but that such arrangements are still permitted by custom to override our knowledge of the develpment of insect life is much to be regretted.

It must be recognized, of course, that evolution has not been linear but divergent, and that the limitations of any printed check-list render it difficult to indicate divergent lines, but this may be overcome by following the method stated by Com-

stock in his paper "Evolution and Taxonomy" thus: "It seems to me that the most practicable way of meeting this difficulty is to begin with the description of the most generalized form known, and to follow this with descriptions of forms representing a single line of development, passing successively to more and more specialized forms included in this line. When the treatment of one line of development has been completed take up another line beginning with the most generalized member of that line and clearly indicating in the text that a new start has been made."

It is almost needless to remark, that probably in no order of insects are we prepared to establish a check-list along such lines, which would every where express the true phyletic relationships. Nevertheless, an attempt to arrange such a list, beginning with the most generalized, and passing toward the more specialized forms would be of vast assistance in attracting attention to the problem of relative degrees of specialization and evolution, and lead to more and better work along this line.

As the matter stands to-day, a purely working collection is rarely arranged in a systematic way at all. One intended for use with classes or for exhibition purposes, will probably show the modern ideas of insect evolution so far as the orders go, but within the limits of an order it must either fail to express any such plan, or indicate only the individual opinion of its arranger in the orders to which he has given most study, while the others show an entire lack of any phylogenetic system. How shall we arrange our collections on anything like the systematic plan followed elsewhere in Zoology, if the check-list makers, whom we perforce must follow at least for the orders less familiar to us, persist in what amounts to a practical rejection of the idea of progressive evolution in the preparation of their lists?

A HESPERID NEW TO OUR FAUNA.—I recently determined for the U. S. National Museum males and females of *Nisoniades brunnea* Herr.-Schaef. They were taken on Sugar Loaf Key, Florida, by Mr. C. L. Pollard, of the National Museum. The sexes are quite dissimilar. The species was originally described from Cuba.—HENRY SKINNER.

The Moths (Heterocera) of Eastern Pennsylvania.

By Philip Laurent.

(Continued from page 72.)

Pyrrhia umbra *Hbn.*, common.
" " var. angulata *Grt.*, ?
Orthosia ferruginoides *Gn.*, rare.
" helva *Grt.*, rare.
" lutosa *Andr.*, rare.
Glæa inulta *Grt.*, rare.
Xanthia flavago *Fab.*, rare.
Cirrœdia pampina, *Gn.*, rare.
Scoliopteryx libatrix *Linn.*, rare.
Xylina disposita *Morr.*, rare.
" petulca *Grt.*, rare.
" bethunei *G. & R.*, rare.
" fagina *Morr.*, rare.
" laticinerea *Grt.*, rare.
" unimoda *Lint.*, rare.
" pexata *Grt.*, rare.
Morrisonia evicta var. vomerina *Grt.*, rare.
Calocampa nupera *Lint.*, rare.
" cineritia *Grt.*, rare.
" curvimacula *Morr.*, rare.
Cucullia convexipennis *Grt.*, rare.
" asteroides *Gn.*, rare.
" florea *Gn.*, rare.
" intermedia *Speyer*, rare.
Marasmalus ventilator *Grt.*, rare.
" histrio *Grt.*, rare.
Ingura oculatrix *Gn.*, rare.
Aletia argillacea *Hbn.*, common.
Ogdoconta cinereola *Gn.*, common.
Abrostola ovalis *Gn.*, rare.
" urentis *Gn.*, rare.
Plusia ærea *Hbn.*, common.
" balluca *Geyer*, rare.
" putnami *Grt.*, rare.
" precationis *Gn.*, common.
" brassicæ *Riley*, common.
" simplex *Gn.*, common.
Calpe canadensis *Beth.*, rare.
Plusiodonta compressipalpis *Gn.*, rare.
Hypsoropha hormos *Hbn.*, rare.
Cirrhophanus triangulifer *Grt.*, rare
Plagiomimicus pitychromus *Grt.*, rare.
Holiothis rhexia *S. & A.*, rare.
" armiger *Hbn.*, common.
Alaria florida *Gn.*, rare.
Schinia nundina *Dru* , rare.
" lynx *Gn.*, rare.
" tertia *Grt.*, rare.
" arcifera *Gn.*, common.
" thoreaui *G.* & *R.*, rare.
" rivulosa *Gn* , rare.
Axenus arvalis *Grt* , rare.
Heliaca diminutiva *Grt.*, rare.
Acontia aprica *Hbn.*, rare.
" erastrioides *Gn.*, common
" candefacta *Hbn.*, common
Chamyris cerintha *Tr.*, common.
Xanthoptera nigrofimbria *Gn.*, rare
Spragueia leo *Gn.*, rare.
Prothymia rosalba *Grt.*, rare.
Metathorasa monetifera *Gn.*, rare.
Euherrichia mollissima *Gn.*, rare.
Lithacodia bellicula *Hbn.*, rare.
Erastria concinnimacula *Gn.*, rare.
" synochitis *G. & R.*, rare.
" musta *G. & R.*, rare.
" muscosula *Gn.*, rare.
" apicosa *Harv.*, common.
" carneola *Gn.*, common.
Galgula hepara *Grt.*, rare.
" subpartita *Gn.*, rare.
Metoponia obtusa *H.-S.*, rare.
Drasteria erechtea *Cram.*, common
" var. agricola *G. & R.*, common.
" erichto *Gn.*, common.
Litosea convalescens *Gn.*, rare.
Euclidia cuspidea *Hbn.*, rare.
Syneda graphica *Hbn.*, rare.
Melipotis jucunda *Hbn.*, rare.

Catocala nubilis *Hbn.*, common.
" elonympha *Hbn.*, common.
" amica *Hbn.*, common.
" " var. lineella *Grt.*, rare.
" gracilis *Edw.*, common.
" " var. sordida *Grt.*, rare.
" minuta *Edw.*, rare.
" grynea *Cram.*, common.
" præclara *G. & R.*, rare.
" micronympha *Gn.*, rare.
" similis *Edw.*, rare.
" amasia *S. & A.*, rare.
" cratægi *Saund.*, rare.
" nuptialis *Walk*, rare.
" cerogama *Gn.*, rare.
" ultronia *Hbn.*, common.
" coccinata *Grt.*, rare.
" ilia *Cram.*, common.
" " var. uxor *Gn.*, common.
" marmorata *Edw.*, rare.
" parta *Gn.*, rare.
" unijuga *Walk.*, rare.
" concumbens *Walk.*, rare.
" cara *Gn.*, common.
" " var. carissima *Hulst.*, rare.
" amatrix *Hbn.*, common.
" relicta *Walk.*, rare.
" tristis *Edw.*, rare.
" epione *Dru.*, rare.
" antinympha *Hbn.*, common.
" serena *Edw.*, rare.
" habilis *Grt.*, common.
" innubens *Gn.*, common.
" " var. hinda *French*, common.
" " var. scintillans *G. & R.*, common.
" paleogama *Gn.*, common.
" paleogama, var. phalanga *Grt.*, rare.

Catocala neogama *S. & A.*, common.
" subnata *Grt.*, rare.
" piatrix *Grt.*, common.
" nebulosa *Edw.*, rare.
" judith *Strk.*, rare.
" robinsonii *Grt.*, common.
" retecta *Grt*, rare.
" " var. flebilis *Grt.*, rare.
" vidua *S. & A.*, rare.
" mæstosa *Hulst.*, rare.
" lacrymosa *Gn.*, rare.
" insolabalis *Gn.*, rare.
" angusi *Grt.*, rare.
" obscura *Strk.*, rare.
" " var. residua *Grt.*, common.
Strenoloma lunilinea *Grt.*, rare.
Phoberia atomaris *Hbn.*, rare.
Celiptera frustulum *Gn.*, common.
Phurys vinculum *Gn.*, rare.
Parallelia bistriaris *Hbn.*, common.
Panapoda rufimargo *Hbn*, common.
Panapoda rufimargo var. carneicosta *Gn.*, rare.
Remigia latipes *Gn.*, rare.
" hexastylus *Harv.*, rare.
Poaphila quadrifilaris *Hbn.*, rare.
" herbarum *Gn.*, rare.
Entoreuma tenuis *Grt.*, rare.
Anticarsia gemmatilis *Hbn.*, rare.
Erebus odora *Linn.*, rare.
Thysania zenobia *Cram.*, rare.
Zale horrida *Hbn.*, rare.
Pheocyma lunifera *Hbn.*, common.
Homoptera edusa *Dru.*, common.
" " var. lunata *Dru.*, common.
Homoptera edusa var. saundersii *Beth.*, common.
Homoptera nigricans *Beth.*, rare.
" calycanthata *S & A*, rare.
Homoptera unilineata *Grt.*, rare.

Ypsia undularis *Dru.*, rare.
Homopyralis discalis *Grt.*, rare.
" tactus *Grt.*, rare.
Spargaloma sexpunctata *Grt.*, rare.
" umbrifascia *Grt.*, rare.
Pangrapta decoralis *Hbn.*, rare.
Phalænostola larentioides *Grt.*, rare.
Pseudaglossa lubricalis *Geyer*, common.
Pseudaglossa denticulalis *Harv.*, rare.
Epizeuxis æmula *Hbn*, rare.
" americalis *Gn.*, common.
Litognatha nubilifascia *Grt.*, rare.
" lithophora *Grt.*, rare.
Herminia morbidalis *Gn.*, common
Pityolita pedipalalis *Gn.*, rare.
Zanclognatha lævigata *Grt.*, rare.
" ochreipennis *Grt.*, rare.
Zanclognatha cruralis *Gn.*, rare.
Zanclognatha marcidilinea *Grt.*, rare.
Philometra longilabris *Grt.*, rare.
" eumelusalis *Walk.*, rare
Rivula propinqualis *Gn.*, rare.
Palthis angularis *Hbn.*, rare.
" asopialis *Gn.*, rare.
Heterogramma rurigena *Grt.*, rare.
Capis curvata *Grt.*, rare
Renia discoloralis *Gn.*, rare.
" brevirostralis *Grt.*, common.
" larvalis *Grt.*, rare.
" flavipunctalis *Geyer*, rare.
" plenilinealis *Grt.*, rare.
Bleptina caradrinalis *Gn.*, common.
Bomolocha baltimoralis *Gn.*, common.
Bomolocha manalis *Walk.*, common
" madefactalis *Gn.*, rare.
Hypena humuli *Harr.*, common.
" scabra *Fabr.*, common.
Tortricodes bifidalis *Grt.*, rare.

(To be continued.)

Notes on Cicindela Hentzii.

By L. E. Hood.

The first specimens of this Cicindelid were discovered in the town of Milton, Mass., situated south of Boston but a few miles, by Dr. T. W. Harris, and were described by Prof. Hentz under the name of *Cicindela hemorrhoidalis* in the Trans. Amer. Phil. Soc., vol. iii, New Series, p. 254.

Specimens were sent abroad to the Count De Jean, who changed the name to *C. hentzii* in honor of its first describer.

I understand that specimens of this species were at this time very rare, and Dr. Gould states in his article read before the Boston Soc. Nat. His. in 1834, that "Dr. Harris has never found it except between the 1st and 20th of August, though he has often sought it at other seasons."

The habitat of this insect is extremely local, but undergoing interesting changes year by year, slowly spreading, not only into towns adjacent to Milton, but is also found in several localities northeast of Boston—points some twelve or fifteen

miles apart—but always inhabiting the same kind of moss-covered rocks and ledges.

It will be seen by this that the City of Boston separates the habitat of this species into two groups of localities; the first, or parent locality, being the town of Milton, from which the species has gradually spread until now it is found in Brookline, West Roxbury and Dorchester (these towns forming part of the City of Boston), and even to Gloucester on the south, and the second locality to the north, where they were first found in the hills near Malden and from which point they have penetrated in to the towns of Melrose and Wyoming in one direction, and in Medford in another.

I found my first specimens of *Cicindela hentzii* in Malden, July 5, 1883. They were very scarce that year, and it was not until some time after this that they began to be found in other nearby districts.

Perhaps the work on the great Metropolitan Park system has had something to do with this, as many roadways have been built, and much blasting, filling in and other work done in order to bring this land into suitable condition.

While the habitat of this species has undergone many changes, so also has there been changes in the time of its apearance, specimens being found often in June. I have found them as early as June 17th one year when the season was very early and the weather very warm. They are found in numbers in July and August and often up to the middle of September, though some years quite rare after about August 20th.

At one time I thought there were two broods of *C. hentzii*, some seasons they become quite numerous in July, but after a few days they suddenly disappear to return in August. I now think this is due to some climatic or other natural cause, as this occurence has not been observed for several years.

It is difficult at best to secure *Cicindela* larvæ and with the *hentzii* this difficulty becomes almost an impossibility owing to the nature of the material they burrow in.

I failed repeatedly in my endeavors to secure larvæ in the usual way, the burrows examined were either situated in large crevices on the face of the ledges, or on the ground between

spurs of the rocks, the former being filled mostly with sand, loose stones, and an accumulation of dirt and dead leaves, the latter often filled with large stones that prevented success in the search quite effectually.

I would find the burrows of the larvæ, but could not get a straw into the hole more than a few inches, and never secured a single specimen until I discovered that the larvæ only bore from three to four inches and then dig the balance of the hole at right angles; sometimes this angle extends under a flat stone.

It is very hard to trace the holes after you once break the ground, as they are soon filled up by the debris.

I have only secured one perfect and one badly damaged larva as the result of many years search, not a very good showing, I confess, but at the same time I have had the enjoyment of the quest.

The perfect specimen was secured under a small flat rock beneath which the tunnel had ended, the entire burrow not being over eight inches long. There is no doubt that the larva is a *hentzii*, as it is rare to find other species with them. The specimen is about the same as a larva of *C. 6-guttata*, rather small and darker than the average examples of *Cicindela*.

While *C. hentzii* is not a rare species, it is by no means a common one and is extra local, specimens have been very scarce the past season.

In the extreme eastern part of Massachusetts a table of the comparative occurence of the species of *Cicindela* would be about as follows—10 representing the most common.

C. purpurea 10, *C. 6-guttata* 10, *C. vulgaris* 8, *C. punctulata* 8, *C. hentzii* 3, *C. repanda* 2, *C. marginata* 1, *C. patruela* 1, *C. dorsalis?*

The first three are found everywhere, the fourth is common in autumn, being often observed on certain streets within the limits of Boston. *C. hentzii* is, as mentioned above, local and never found except in well defined situations. *C. repanda* is rather scarce though abundant in sandy fields a few miles inland. *C. marginata* is very rare.

C. patruela, once very common in a sandy field about one mile south of the Newtonville depot, a town a few miles west

of Boston, is now extremely rare, if not extinct. I have found no specimens during the past ten years. I have seen specimens of *C. generosa* that were found on the seashore to the south of Boston, but have never found any though often searched for. I class it as a questionable inhabitant of our locality.

A Collecting Trip South.

By J. H. Reading, Chicago, Ill.

We, that is my wife and I, started for Jackson, Miss., Sunday, September, 7, 1902, at 6.20, over the Illinois Central and landed in Memphis, Tenn., about 8 A M., Monday. We were fortunate in accidentally going to what I afterward found to be the best hotel in the South, as far as my experience went, the Arlington on the corner of Adams and Main Streets. We had decided to lay over a day in Memphis and look around. Here is where I found I had made my first mistake. I packed my net in one of our telescopes and had it checked to Jackson, so I had nothing but my cyanide bottle to help me when we got among the game. After breakfast I inquired if there were any parks around the city, and was told by the hotel clerk I had better see their new cemetery "Greenwood," so out to Greenwood we went. It is a fine park-like place, well kept, and has many fine trees, among which I searched diligently and was rewarded by the capture of two *Catocala* moths, one *relicta* and one *piatrix*. There were quite a number of butterflies flying about, mostly *Euptoieta claudia*, but I could not catch any of them. I caught some specimens of *Lycaena*, but do not know just what variety they are. After dinner we took another trip on the trolley cars to East End Park, and it was at this place I missed my net more than ever. This park is a natural woods used as a pic-nic grounds in the summer time, and it seemed to be alive with a dozen or more different varieties of butterflies. There seemed to me to be about 7,000,000 of them in that park, and by being foxy I succeded in catching three or four specimens of *turnus* and *troilus* with my fingers as they were feeding on some tall flowering weeds that were new

to me and which grew as high as my head. I could not find a *Catocala* in this park, and I soon got disgusted and left for the hotel. I have found it to be a fact, when in former years around Chicago I would go out in the woods without my gun that I would see all kinds of game, and I guess it holds good on the butterfly question. The next morning we were off for Jackson, where I looked forward to better luck. We arrived safely at 2.30 P. M. and went to the only hotel in that city. After getting our baggage over from the depot and getting my net, we went on the one and only street car to some nameless park at the terminus of the line, and I was soon busy looking for game, but without much luck, as my wife was afraid to be left alone in this lonesome place, so we decided to go back to the hotel, the calulation was that I would come out alone in the morning and see what I could capture. We got back in time for supper, and such a supper, it nearly poisoned both of us! I thought I could go almost anything anybody else could, but this game was too fierce for me, while my wife was rendered quite sick. The stuff was not cooked and the coffee and tea served were a delusion and a snare.

I found a train left for Birmingham, Ala., at 7.20 P. M., and we decided to go there at once, so did not have a chance to see any more of Jackson or its surroundings, and if the Lord will forgive me for ever going there this time I will promise never to offend in a like manner again. To make matters worse, the weather turned cold, and a raw chilly wind came up that chilled one through and through. It reminded me of one of our lake breezes in November at Chicago. So if this is the sunny South, thought I, please give me no more of it. After a long night ride over the Queen and Crescent Railroad by way of Meriden, where we had to change cars, we arrived in Birmingham, Ala., about 7.30 A. M.

I had noticed a suburb of the city, as we came through on the cars, called Powderly after my friend Terry the old K. of L. chief, and jumping on a trolley car, labeled Powderly, I was soon leaving the city behind me and getting out into the fields and woods of the country. I left the car at what I thought a likely looking place and struck out over a field

yellow with field daisies, as they called them down there. The dew was heavy on every bush and blade of grass, and in five minutes my feet were as wet as if I had jumped into a creek, but I was among the butterflies at last, and all discomforts and disappointments were for a time forgotten. They were *Terias nicippe* mostly, but there were thousands of them. I found a field where something had been planted some time, but it seemed to me to have nothing growing there but wild morning-glories, and they were alive with *Catopsilia eubule*, *Terias nicippe*, and here and there an *Agraulis vanillæ* and *Eu. claudia*, *Pyrgus tessellata* and *J. cænia*, could be seen, and some small yellow flies about three-quarters of an inch wide. I had a good two hours' fun among them all and captured about 200 specimens in that time and then went back to the hotel for dinner.

I spent more or less of every day out at my morning-glory patch, and found that after 10 A. M. the butterflies generally deserted the morning-glories, but where they went to I could not discover. I took many long walks through the woods around Birmingham, but with the exception of a little gray and brown moth of which I caught six or seven among the weeds, I saw nothing alive but a small tree lizard which was too quick for me to catch. I found one old battered specimen of a *Catocala;* it was so rubbed and battered that I could not tell whether it was *obscura* or *insolabilis*, but whatever it was I left it alone in its glory and isolation. I got a little nigger (as they are called down there) to accompany me through the woods and I could not make him believe anything else but that I used the butterflies to make medicine. There are no collectors down there and it was a common salutation, "Say, Mista, wat yo catch dem grasshoppers fo!"

I found the weather in the South during September to be colder and more disagreeable than in Chicago.

They tell me June is the best month to visit that section, and if I ever go again it will be in the early Summer.

THE FOLLOWING was told to me by my "better half" (?)

Tramp: Give me a cent's worth of bug powder.

Druggist: Don't sell a cent's worth, that wouldn't pay for the paper.

Tramp: Don't want any paper, just put it down my back.—P. L.

Maryland Hymenoptera (Aculeata).

By H. L. Viereck.

This list is based on a collection made by Mr. E. G. Vanatta, of the Academy of Natural Sciences of Philadelphia, and specimens sent for identification by Professor A. L. Quaintance. Those from Chestertown and Pomona were collected by Mr. Vanatta. The rest are from the collection of the Maryland Agricultural College.

There is no list of Maryland Hymenoptera in our literature, but this is true of most States, and there is a vast field for useful, interesting work of this kind. It would be an incentive to work if we had the species in each State listed. Again, accurate records are needed; too much stress cannot be laid on the fact that an insect should be perfect, and accompanied by locality, date and such notes as can be gathered about its habits. In Hymenoptera a large number of the species are only known vaguely to come from a State. We need more records as it is only by their accumulation that the mist that enshrouds so many facts will be dispelled, and there should be no hesitancy in making known accurate notes.

Bombus virginicus Oliv. ♀ and ☿ ☿, College Park, Oct., Sept, 1893. ☿ ☿, Chestertown, August 17, 1899.

Bombus americanorum Fabr. ☿ ☿ and ♂, Chestertown, Aug. 26, 1899, some of these ☿ ☿ have the band of pubescence on anterior part of thorax white. I have never noticed this on specimens from other localities. College Park, ♀ ♀, ☿ ☿, ♂ ♂. June 29, 1898, July 14, 1897, Oct., 1893.

Bombus separatus Cress. ♂ ♂, Chestertown, Aug. 6, 1901, Aug. 13-17, 1899. Boonsboro, Aug. 5, 1898, ☿ ☿.

Psithyrus laboriosus Fabr. ♀ ♀ and ♂ ♂, College Park, Oct., 1893.

Xenoglossa pruinosa Say. ♂ ♂, College Park, July 14, 1898.

Emphor bombiformis Cress. ♀ and ♂, Chestertown, Aug. 12, 1901. Co-types are from Kansas (Snow), Georgia and Virginia. Gloucester Co., N. J., Aug. 6 (Fox).

Melissodes perplexa Cress. ♀, College Park, Sept., 1893.

Melissodes rustica Say. ♀, College Park, Sept., 1893.

Epeolus mercatus Fabr. ♂ ♂, College Park, Sept., 1893.

Epeolus remigatus Fabr. ♀ ♂, College Park, Sept., 1893, July 7, 1898.

Xylocopa virginica Dru. ♀, Chestertown, Aug. 12, 1901.

Megachile mendica Cress. ♀, College Park, Sept., 1893.

Anthidium notatum Latr. ♀, Chestertown, Aug. 12, 1901.

Panurginus compositarum Rob. ♀ ♀, College Park, Aug , 1893.
Andrena bipunctata Cress. ♁, College Park, Sept., 1893.
Andrena vicina Sm. ♁, College Park, April 10, 1898.
Andrena americana D. T. ♀ ♀, ♂, College Park, Sept., 1893.
Augochlora pura Say. ♂ ♂, College Park, June 23, 1898.
Agapostemon radiatus Say. ♀, College Park, Sept., 1893.
Halictus flavipes Fabr. ♀ ♀, College Park, May 20, 1898. Hagerstown, July 25, 1898. Chestertown.
Halictus pilosus Sm. ♀, College Park, July 21, 1898.
Halictus zephyrus Sm. ♂, College Park, Sept., 1893.
Halictus inconspicuus Sm. ♀ ♀, ♂ ♂, College Park, June 23, 1898.
Halictus fuscipennis Sm. ♂, College Park, Sept , 1893.
Halictus pectoralis Sm. ♂, College Park, June 23, 1898.
Halictus similis Sm. ♀, College Park, Oct.
Halictus ligatus Say. ♀ ♀, College Park, July 8, 1898, July 14, 1897. Hagerstown, July 25, 1898.
Colletes compactus Cress. ♀ ♀, College Park, Sept., 1893.
Colletes mandibularis Sm. ♀, College Park, Sept., 1893.
Colletes nitidus Sm. ♂, College Park, Sept., 1893.
Prosopis affinis Sm. ♀, College Park, June 29, 1898.
Notoglossa emarginata Say. ♁, Chestertown, Aug. 17, 1901.
Anacrabro ocellatus Pack. ♀, Chestertown, Aug. 17, 1901.
Psen tibialis Cress. ♂, College Park, June 23, 1898.
Notogonia argentata Beauv. ♀, College Park, May 21, 1898, Sept. 1893.
Ancistromma distincta Sm. ♀, College Park, Sept., 1893.
Larra analis Fab. ♀ and *cressonii* Fox = ♁ *analis* Fabr. College Park, Oct., Sept , 1893.
Tachytes aurulentus Fabr. ♀, College Park, Sept., 1893. ♂ Chestertown, Aug. 17, 1901.
Tachytes obscurus Cress. ♀ ♀, College Park, Sept , 1893.
Cerceris bicornuta Guer. ♀ ♀, Chestertown, Aug. 3, 1901.
Cerceris fumipennis Say. ♂ ♂ var. with light wings. College Park, July 9, 1898, Oct. 19, 1898.
Pseudanthophilus ventilabris Cress. ♀ ♀ and ♂ ♂, Chestertown, Aug. 10-17, 1901.
Anthophilus punctatus Say. ♂, College Park, Sept. 3, 1897.
Anthophilus bilunatus Cress. ♀, College Park, Sept., 1893.
Trypoxylon tridentatum Pack. ♂ ♂, College Park, July 1-31, 1897.
Astata unicolor Say. ♀ ♀, ♂ ♂, College Park, Sept., 1893, July 31, 1897.
Sphecius speciosus Dru. ♀, ♂ ♂, the latter sex Chestertown. Aug. 3, 1901.
Megastizus brevipennis Walsh. ♀, College Park, July 21, 1897, previously known only from Illinois, Kansas and Texas.
Sphex ichneumoneus Linn. ♀, ♂, Chestertown, Aug. 2, 10, 1901.
Sphex pennsylvanicus L. ♀ ♀ and ♂ ♂, Chestertown, Aug. 2-17, 1901.
Isodontia tibialis St. Farg. ♀ ♀ and ♂ ♂, Chestertown, Aug. 23, 1899, Aug. 17, 1901.

Ammophila urnaria Klug. Chestertown, Aug. 8, 17, 1901.
Ammophila extremitata Cress. var. *pictipennis* Walsh. ♀ ♀ and ♂ ♂, Aug. 16, 1899. Aug. 10, 12, 17, 1901.
Ammophila violaceipennis St. Farg. ♀ ♀, ♂ ♂, College Park, Oct. 20, 1900. Chestertown, Aug. 13, 23, 1899.
Ammophila procera Dahlb. ♀, ♂, Chestertown, Aug. 17, 1899, Aug. 3, 1901.
Ammophila gracilis St. Farg. ♀, Chestertown, Aug. 17, 1901.
Sceliphron cementarius Dru. ♀ ♀ and ♂ ♂, College Park, Sept. 1893, July 17, 1897. Chestertown, Aug. 8-28, 1901.
Chalybion caeruleum L. ♀ ♀, ♂ ♂, College Park, Aug. 26, 1897, Sept., 1893, May 27, 1898. Chestertown, Aug. 1, 1901.
Cryptocheilus fulvicornis Cress. ♀, Chestertown, Aug. 16, 1901.
" *unifasciatus* Say. ♂, Chestertown, Aug. 3, 1901.
Anoplius atrox Dahlb. ♀ ♀, ♂ ♂, College Park, Sept., 1893.
" *americanus* Bv. ♀ ♀, College Park, Sept., 1893.
" *tenebrosus* Cress. ♀, College Park, Sept., 1893.
Agenia bombycina Cress. ♀ ♀, Aug., 1895.
Vespa maculata L. ♀ ♀, ♂, College Park, Feb. 13, May 6, 1898, Sept, 1893.
Vespa carolina Dru. ♀, College Park, May 25, 1898.
" *vidua* Sauss. ♀, College Park, Sept., 1893.
" *germanica* Fabr. ♀, ♀ ♀, College Park, Sept., 1893, May 12, 1898, Aug. 4, 1897. Chestertown, Nov., 1898 (Mary. Agric. Coll.), Aug. 14, 1901 (E. G. Vanatta).
Vespa cuneata Fabr. ♀ ♀, College Park, Sept., 1893, Aug. 4, 1897.
Polistes rubiginosus Lep. ♀ ♀, College Park, Sept., 1893, May 9, 1898.
Polistes variatus Cress. ♀ ♀, ♂ ♂, College Park, Sept., 1893, July 17, 1897, Jan. 26, May 11, Oct. 20, Nov. 18, 1898 Chestertown, July 29,-Aug. 3, 1901.
Polistes metricus Say. ♀ ♀, ♂, College Park, Sept., 1893, Jan. 19, 1897, Jan. 21, March 12, 24, May 2, 1898, Oct. 10, 1900. Chestertown, Aug. 1, 1901.
Polistes annularis L. ♀ ♀, Chestertown, Nov., 1898 (Coll.), Aug. 12, 1901.
Leionotus conformis Sauss. ♀, College Park, Sept., 1893.
Ancistrocerus capra Sauss. ♀ ♀, College Park, Sept., 1893.
Monobia quadridens L. ♀ ♀, ♂, College Park, Sept., 1893, July 4, 1897, July 2, 1898. Chestertown, Aug. 10, 1901.

Holepyga ventralis Say. College Park, Sept., 1893. A remarkable freak, it has the 2nd abd. seg. separated into 2 parts by the union of the first and third across the mid.

Olochrysis perpulchra Cress. Chestertown, Aug. 2, 1901, previously known from Canada, Delaware, Camden Co., N. J., July 12 (Fox), N. C., Geo., Colo., Utah, Nev., Calif., N. M., Mont., Wash. and Vancouver's Island.

Trichrysis tridens Lep. Chestertown, Aug. 8. 1901.
Tetrachrysis cærulans Fabr. College Park, Oct., 1893, July 9, 1898.
Myzine sexcincta Fabr. ♀ ♀, ♂ ♂, College Park, Sept., 1893. Chestertown, Aug. 2-12, 1901.
Myzine hamata Say. ♂ ♂, Mulliken, Aug. 5, 1897. Boonsboro, Aug. 5, 1898.
Scolia bicincta Fabr. ♀ ♀, ♁, Boonsboro, Aug. 5, 1898. College Park, Sept. 2, 1897. Chestertown, Aug. 16, 1901.
Scolia dubia Say. ♂ ♂, ♀, College Park, Aug. 12, 1897. Chestertown, Aug. 10-17, 1901.
Elis quadrinotata Fabr. ♁.
Timulla hexagona Say. ♁ ♁, Chestertown, Aug. 12, 1901, ♀ ♀ = *dubitata* Sm., Chestertown, Aug. 2, 1901. College Park, Oct., 1898.
Ephuta scrupea Say. ♂, Chestertown, Aug. 1, 1901.
Pseudomethoca canadensis Blake. ♂, Sept. 16, 1897.
Dasymutilla occidentalis L. ♀, Chestertown, July 31, 1901.
Sphærophthalma cypris Blake. ♀ ♁, College Park, Aug. 26, 1897. Chestertown, Aug. 30, 1901.
Sphærophthalma vesta Cress. ♀ ♀, Mulliken, May 5, 1898. Chestertown, July 30, 1901.
Sphærophthalma castor Blake. ♂ ♂, Chestertown, Aug. 12-16, 1901.

Identifications of the ants below have been furnished by Professor W. M. Wheeler.

Cremastogaster lineolata Say. ♂ ♂, ♀ ♀, ☿ ☿, Chestertown, Aug. 4-10, 1901. ☿ ☿, ♀ ♀, College Park, Sept. 3, 1897.
Tetramorium cæspitum L. ☿ ☿, Chestertown, Aug. 2, 1901.
Monomorium minutum Mayr. var. *minimum* Buckley. ☿ ☿, Chestertown, Aug. 13, 1901.
Pheidole vinelandica Forel. 44 ☿ ☿, Chestertown, July 30, 1901.
Stenamma (*Aphænogaster*) *tennesseense* Mayr. ♀ ♀, ♁ ♁, Chestertown, Aug. 2-8, 1901. Pomona, Aug. 8, 1901.
Stenamma (*Aphænogaster*) *fulvum* Roger. Typical ☿ ☿, ♀ ♁, Chestertown, Aug. 2-8, 1901.
Dolichoderus mariæ Forel. ♂ (probably), College Park, June 23, 1898.
Tapinoma sessile Say. ☿ ☿, Chestertown, Aug. 7, 1901.
Camponotus castaneus Latr. ☿ ☿, Chestertown, Aug. 10, 1901.
Camponotus herculeanus L. subsp *pennsylvanicus* DeGeer var. *ferrugineus* Fabr. ☿ ☿, Pomona, Aug. 8, 1901.
Camponotus herculeanus L. subsp. *pennsylvanicus* DeG. ☿ ☿, July 28, 1901. Chestertown, ♀ ♀, 44, Aug. 8, 1901, Pomona.
Prenolepis imparis Say. ☿ ☿ ? College Park, Sept., 1893.
Prenolepis imparis Say. var. *minuta* Em. ☿ ☿, July 30, 1901.
Lasius umbratus Nyl. subsp. *mixtus* Nyl. var. *minutus* Em. ♀, ☿ ☿, ♁ ♁, Aug. 4-8, Chestertown.

Lasius niger L. var. *americanus* Em. ♀ ♀, July 30-Aug. 3, 1901.
Lasius claviger Roger. Four ♀.
Formica pallidi-fulva Latr. subsp. *schaufussi* Mayr. var. *incerta* Em. ♀ ♀, June 29-Aug. 10, 1901, Chestertown.
Formica fusca L. var. *subsericea* Say. ♀ ♀, June 28-Aug. 8, 1901, Chestertown.

San Francisco; a Reminiscence.

By H. F. Wickham, Iowa City, Iowa.

Through lonely days under the glaring sun of the great southwestern deserts, comes now and again the remembrance of pleasant hours spent in the company of kind friends in the metropolis of the Pacific Coast; strong is the temptation to leave the alkali water, the burning, deserted sand-flats and the barren hills for the comfort of the pleasant homes where cordial welcome and entertaining discourse await the wandering insect hunter. In this far Western city, there has been of late years a great awakening of interest in our study, and the labors of the pioneer, Chas. Fuchs, are now supplemented by those of many another who finds a great part of his inspiration in the unflagging zeal and cheerfully given assistance of our friend. His home is truly "entomological headquarters" for the elect of San Francisco, and fortunate is the man who finds himself there, when, towards the end of the afternoon, the fraternity begins to assemble for one of those informal, unannounced, spontaneous social sessions, the outcome of a general desire to show and discuss treasures, to exchange opinions and views, and to enjoy the genial society of the host and his wife. The fine reference collection of Mr. Fuchs is in constant demand to illustrate one point or another, and many is the rarity that the visitor sees here for the first time in his life. Here he meets not only the resident students of our science, but those as well who are passing through the city, en route for other points, since no one who cares for beetles neglects to present himself at the first opportunity.

Mr. Fuchs' collection of Coleoptera is not only of great extent, but is beautifully mounted, and the matter of labelling has received careful attention, so that one finds more than a State record when he examines the material. A particularly

interesting feature is the series of specimens representing the genera of North American beetles, this being the line along which the owner has put his best endeavors. It is doubtful if so complete a lot can be shown in any other cabinet, public or private, in the country. A few squares away, may be seen the collections of Dr. Blaisdell, extremely rich in Californian species, the interest just now centering in the Tenebrionidæ, especially *Eleodes*, upon which group the Doctor is now at work. Mr. Letcher is supplementing a large collection of Pacific Coast Lepidoptera by one of beetles, and is a most welcome addition to the ranks of students of the order. Across the bay, at Oakland, Dr. Van Dyke has one of the finest collections of Coleoptera on the Coast, the result largely of his own travels about the State, while certain genera which engross his attention at present have been nearly completed.

The California Academy of Sciences has in its museum a considerable collection of insects. This is under the charge of Mr. Fuchs, excepting the Lepidoptera, which are cared for by Dr. Behr. The most valuable portion is the Baja Californian series, the result of several trips to the peninsula by Dr. Eisen, Miss Brandegee, Mr. Vaslit and Mr. Haynes. These collections have been worked out by specialists, and Mr. Fuchs has adopted a system of arrangement whereby the types are kept separate from the rest, and thus rendered more readily accessible. He has in preparation a list of these types, and of others which are in the possession of entomologists on the Pacific Coast, so that when this is made public it will be an easy matter for the student to find the ones he wishes to examine.

Besides the Lower Californian material, which for the present is kept separate from the rest, the Academy has a considerable series from other sources. The collection of the late Capt. D. H. Murdoch belongs here now, and contains some very good things, but is unfortunately deficient in labelling, not even a State record appearing on most of the pins. Another collection consists of specimens from the mainland of Mexico. Smaller lots from various sources make up a fair-sized aggregate. Aside from the Coleoptera I have no knowledge of the cabinet, since I neglected to examine the collections in the other orders.

On the 15th of August, 1901, the entomologists of California organized a society under the name of "The California Entomological Club," the membership reaching about thirty. The scope and title were later widened, and now, under the caption "The Pacific Coast Entomological Society," the whole Coast, from north to south, will contribute its quota. Official meetings are held quarterly, and the results are already showing through the columns of our entomological journals, though the society maintains no collections and publishes no organ of its own.

Notes on Some Interesting Species of Forficulidae and Blattidae from the Eastern United States.

By James A. G. Rehn.

Apterygida luteipennis (Serville).

1839. *Forficula luteipennis* Serville, Orthopt., p. 46. [Brazil.]

—1876. *Forficula aculeata* Scudder, Proc. Boston Soc. Nat. Hist., xviii, p. 262. [New York, Northern Illinois, Southern Michigan.]

One female; Pennsylvania. (A. N. S., Phila.)

This species has been previously recorded from New York, New Jersey, Illinois, Michigan, Iowa and Nebraska.

Forficula auricularia Linnæus

1758. [*Forficula*] *auricularia* Linnæus, Syst. Nat., x ed., p. 423. [Europe.]

Four males; Lafayette, Indiana. Collected by F. M. Webster, about May 15, 1889. (U. S. Nat. Mus.)

This species has previously been recorded from New York and New Jersey.

Ischnoptera nigricollis Walker.

1868. *Ischnoptera nigricollis* Walker, Catal. Blatt. Brit. Mus., p. 118. [Georgia.]

One male; Enterprise, Florida. April 20. (Collection of C. Few Seiss.)

Apparently this is the first record since the original description.

Phyllodromia cubensis (Saussure).

1862. *Bl*[*atta*] *cubensis* Saussure, Revue et Magasin de Zoologie (2), xiv, p. 165. [Cuba.]

One ♀; Miami, Florida. Collected by Philip Laurent. (Collection of C. Few Seiss.)

This species, here recorded within our national limits for the first time, was originally described from Cuba, where,

according to Saussure (Mem. Hist. Nat. Mexique, iv, p. 109), it is very common.

Temnopteryx virginica Brunner.

1865. *T[emnopteryx] virginica* Brunner, Nouv. Syst. Blatt., p. 86. [Draper's Valley, Virginia.]

One ♀ ; St. Augustine, Florida. Collected by C. W. Johnson. (A. N. S., Phila.)

This specimen considerably extends the range of this species, which has never been recorded south of Virginia. Mr. W. S. Blatchley, in "A Nature Wooing" (p. 217), speaks indefinitely of the species as though occurring in Florida, but makes no records of captures or observations.

Temnopteryx major Saussure and Zehntner.

1893. *Temnopteryx major* Saussure and Zehntner, Biol. Cent.-Amer., Orth., i, p. 54. [Tennessee.]

Two females; Chestertown, Maryland. Collected by E. G. Vanatta, August 5, 1901. (A. N. S., Phila.)

This very striking species was described from Tennessee, and this is apparently only the second record for the species. It can readily be distinguished from *T. virginica* by its large size and the broadly rotundate tips of the the tegmina.

A New Sesiid.

By Henry Skinner.

Albuna beutenmülleri n. sp.

♀. Expanse 20 mm. Antennæ, palpi, head, thorax, abdomen and legs, black. Segments of abdomen slightly differentiated by being somewhat bluish and shining. Under side of abdomen and thorax with blue-black shining metallic scales. Hind legs clothed with long black hairs. Wings bright red, edged narrowly with black. Fringes black. Fore wings with a translucent spot at outer third, divided by the red veins into four parts. There is also a similar spot at inner third in the centre of the wing, which is linear. These spots are covered with beautiful, very light greenish or bluish opalescent scales. The base of the wing is black and the black margin breaks and runs slightly into the wing from the inner margin. The hind wing has two spots of the same character—one beyond the middle resting on the costa and divided into two parts, and a larger one near the base, divided into three parts by the veins. This spot extends the width of the wing. Base of wing black.

This species somewhat resembles *Euhagena nebraskæ* Hy. Edw. but the red color is brighter and shining. *E. nebraskæ* lacks the beautiful opalescent spots. Described from one specimen taken at Stockton, Utah, May 24, 1902, by Mr. Thomas Spalding.

ENTOMOLOGICAL NEWS.

[The Conductors of ENTOMOLOGICAL NEWS solicit and will thankfully receive items of news likely to interest its readers from any source. The author's name will be given in each case, for the information of cataloguers and bibliographers.]

To Contributors.—All contributions will be considered and passed upon at our earliest convenience, and, as far as may be, will be published according to date of reception. ENTOMOLOGICAL NEWS has reached a circulation, both in numbers and circumference, as to make it necessary to put "copy" into the hands of the printer, for each number, three weeks before date of issue. This should be remembered in sending special or important matter for a certain issue. Twenty-five "extras," without change in form, will be given free, when they are wanted; and this should be so stated on the MS., along with the number desired. The receipt of all papers will be acknowledged.—ED.

PHILADELPHIA, PA., APRIL, 1903.

The earth is becoming smaller. We do not mean that it is shrinking, but that the facilities for getting over or around it are so great that it does not seem as big as it did in the past. It is no uncommon thing for European Entomologists to visit this country on collecting tours or for the study and inspection of our collections. American Entomologists also go abroad for similar purposes. For those who can afford it nothing is pleasanter than to go after some interesting or rare species in its native haunts. Lately we have had the pleasure of meeting two entomologists from Germany who have been collecting in this country, and one of them is now planning another vacation trip to get some of our interesting species like *Argynnis diana* and *nitocris*. The other gentleman is interested in the Coleoptera. The geographical barriers will gradually be broken, and entomologists will become more and more interested in the species of the world as time goes on. This is as it should be, and will create an interest in the genera from the standpoint of the species of the world. Genera are now described without reference to the correlation of the species, and it will be years before this part of our classification is placed on anything like a firm foundation.

Entomological Literature.

A List of the North American Lepidoptera and Key to the Literature of this Order of Insects. By Harrison G. Dyar, Ph. D, Custodian of Lepidoptera United States National Museum, assisted by C. H. Fernald, Ph. D., the late Rev. George D. Hulst and August Busck.

This is an exceedingly valuable work and has been most carefully compiled, and there are but few serious omissions. It will be found indispensable to workers in the order Lepidoptera. Each species is given a number and the varieties are consecutively lettered. There are 652 species of Rhopalocera listed, whereas my Synonymic Catalogue (1898) contains 645 species. Dr. Dyar used 158 genera, whereas my late catalogue contains 65. The average, therefore, in Dr. Dyar's list is about one genus to a little over four species in the butterflies. I do not censure the author of the list for having followed the literature as he found it, and sincerely congratulate him on producing a work of such excellence, but I do believe that taking the genera as a whole in the Lepidoptera, especially in the Rhopalocera, they are unphilosophical, unscientific, absurd and "densely horrible," like the boiling oil mentioned in the opera of Mikado. These remarks only apply in part to the genera themselves, but refer also to the correlation of the species under them. There are several causes for this condition of affairs, such as the *mihi* itch, want of knowledge of the significance and value or lack of value of anatomical characters; workers in various parts of the world describing genera without reference to the species of the world and ignorance of the value or lack of value in the genera as a scheme of sub-classification. Why not erect a genus for each species and then drop them all and get back to the species, the unit of classification. Let us take a look into the list and see how the genera appear from a logical standpoint.

The old genus *Papilio* is divided into *Iphidicles* for *ajax* and *sinon; Lærtias* for *philenor* and *Ithobalus* for *acauda* and *polydamas*. *Acauda* is very closely related to *philenor* and may even be only a geographical race of it, yet we find them in different genera. Now what have we left under Papilio? Why logically from the standpoint of modern genera a conglomerate. *Ajax* is probably more nearly related to many in *Papilio* than *daunus* is to *indra*. How do *cresphontinus* and *machaon* compare in view of the segregation of some of the species under the three genera other than *Papilio?*

It would take a large volume to do this subject justice, so we must not tarry too long in one place, so therefore skip *Semnoppsyche* and *Speyeria*. It may be of some interest to know that *Lemonias approximata* Strecker is a synomym of *Schœnis arachne* Edwards.

Eugonia j-album and *californica* are probably another instance of absurd correlation. Our present knowledge does not warrant the lumping of so many names under *Œneis norna* (p. 31). There can be no question about the value of dividing large aggregations of species if the basis for division amounts to anything. Our previous remarks apply to the old genus *Thecla* which is divided into 14 genera. All that is necessary is to look over the species and see the utter absurdity of the whole thing. Under *Eupsyche* are placed species that have no relationship. Poor *melinus* looks very lonely. The Hesperidæ are also in a chaotic condition. There is a character found here and there throughout the family, the costal fold. It is a male character and no one knows why it occurs in one species and not in another. Some genera are separated on its presence or absence and in other cases it is not used at all. The genus *Pholisora* is based on its presence, if I remember correctly, as is also the genus *Cocceius* Godman and Salvin. The latter genus is based on *pylades* which is separated generically from *bathyllus*. *Eudamus simplicius* has a costal fold and *Eudamus eurycles* has not. Now what is to be done—should a new genus be based on *simplicius* or should *simplicius* go with *Pholisora catullus* or with *Thorybes pylades*. If we follow methods in vogue it would be a new genus. Logically it would be tommyrot. One of my professors in college said it was all nonsense to try and teach people logic, as they were born either logical or illogical. Do the species with a costal fold belong to one genus or to many genera? The correlation under the generic divisions of *Pamphila* are enough to make one weep. For example take *Calpodes ethlius* and *Calpodes pythoη, Limochroes manataaqua* and *Thymelicus cernes*. The latter two are placed in different genera and there is even doubt about their being distinct species.

The same remark applies to *Epargyreus tityrus* and *Rhabdoides zestos*. Another example is *Lerema accius* and *Lerema deva*. Still another *Phycanassa viator* and *Phycanassa carolina*. One large genus like *Pamphila* should be divided, *provided the division is based on a character or characters that hold good for the species separated*. What use are genera if the species are placed by guess-work and show no true relationship? If the many generic divisions of the Heterocera show the same want of specific correlation, they are indeed in a sad state. Space and want of familiarity do not permit me to speak of these in detail. It may not be amiss to point out that there is no relationship between *Psychophora sabinii* Curtis and *b. immaculata* Skinner, as they belong to different families.

Comparative anatomy is an interesting study and the anatomical differences in insects should be made known, but it does not follow that every species that shows some anatomical difference is a new genus. It should not be forgotten that a classification is to facilitate study and identification, and that it is not an exposition of comparative anatomy. We

need someone to go over the genera and place them on a firmer foundation and properly correlate the species. The genera of the world would have to be taken into account to do this properly.

Dr. Scudder's genera are often based on flimsy characters or none at all. The common *Thecla melinus* is put into *Uranotes*. This genus differs from the others in having "the inner transverse stripe on under surface of hind wings with only shallow or zigzag indentations." *Habrodias* (*Thecla grunus*) "with tail of hind wings triangular."

Some divisions in *Thecla* are "hind wings tailed" and "hind wings not tailed." This in some cases would place one species in two genera. In other cases genera are based on color alone. Many genera not used in the list have been proposed. Why would it not have been logical to have used them all? Dr. Dyar has put into the synonymy many described varieties based on color, etc. Perhaps he is right in the individual cases, but he is certainly wrong from a comparative stand point. All should go or none. For instance, he sinks *fumosus* a color variety of *Danais plexippus*, and describes as new, *altaurus* as a variety of *Parnassius clodius*, because it has yellow spots instead of red.

The list shows many incongruities. Let us hope that bringing them so prominently into notice will have a tendency to cure the evil.—H. S.

In the *Journal of the Association of Military Surgeons, Vol. xii, No. 2. pp. 84-107* (February, 1903), C. S. Ludlow, M.Sc., publishes a paper entitled: "Classification, geographical distribution and seasonal flight of the mosquitoes of the Philippine Islands." The author describes as new species, *Anopheles pseudobarbirostris* and *A. philippinensis*. The paper is illustrated by figures showing structure, and has many interesting notes on the various species.—W. J. F.

Doings of Societies.

A meeting of the Entomological Section of the Academy of Natural Sciences of Philadelphia was held Jan. 22d, Mr. Philip Laurent presiding. Fourteen persons present. Mr. W. D. Denton, visitor from Wellesley, Mass. Dr. Calvert exhibited and made some remarks on the Odonata described in the February NEWS. Mr. Rehn exhibited the roaches belonging to the genus Homœogamia. The box contained all the species, including a recently described one from New Mexico. The type was unique until the speaker and Mr. Viereck had taken eleven specimens. Mr. Bradley again referred to the specimens of the family Mymaridæ and decided that the genus

was closest to *Anagrus*, and possibly a new species. There were some characters that led him to think the species might represent a new genus.

Mr. Rehn called attention to a paper by C. W. Leng on the Cicindelidæ of the pine-barrens of New Jersey (Jour. N. Y. Ent. Soc.). The speaker described the characters of this very interesting region. Many of the plants show boreal types. Mr. Wenzel said there was but one species of *Cicindela* found on the plains that was not found in the general pine-barren district. Mr. Denton exhibited a ♂ of the rare and beautiful *Ornithoptera paradisea* from German New Guinea. Also *O. crœsus* ♂ from the island of Batchian. Dr. Calvert exhibited a paper or envelope for insects sent by Mr. Williamson. It had a special device for keeping the paper closed.

HENRY SKINNER, *Recorder*.

A meeting of the American Entomological Society was held February 26. Dr. P. P. Calvert, President, in the chair. Thirteen persons were present. Mr. H. W. Wenzel referred to an article in the NEWS by Mr. Chas. Schaeffer on *Derobrachus*. The Horn material labelled *geminatus*, the speaker said, was not that species but *forreri*. Mr. Wenzel exhibited his fine series of the species in the genus and pointed out how they could be readily separated.

Mr. Henry L. Viereck read a paper on the Aristotle Society as follows: In this city there is a modest organization, the Aristotle Society. The name indicates what a broad field of work the Association may aspire to, and this name has been chosen because it was desired to add to the advancement of Natural History and exclude discussion or effort in no department thereof. Most of the members are interested in entomology and it has been their aim to add to the knowledge of our local insects from a faunistic point of view. Lately this intention has crystalized into the beginning of a movement toward a list of the insects of Pennsylvania on the general plan of the admirable list of New Jersey insects. We anticipate the co-operation of specialists in the various orders to make identifications and invite all to aid us, particularly the

Entomological Society of Western Pennsylvania. Political boundaries are, of course, not exactly the thing to have for faunistic work, but the step is a good one and in the right direction. When such State lists are published entomologists will be encouraged to add new records, and then when we know more of the Biotic zones of the country, the data will be available for the study of the natural divisions of the land, the faunistic states of Nature's union. Fortunately the necessity of attaching labels to specimens, indicating the exact locality in which they were captured, has been firmly established, so that at present insects bearing only State labels are almost as worthless as those bearing no label at all. Furthermore, there is a marked tendency to note some of the more apparent habits with a view toward ascertaining certain facts, as in the bees for instance, whether they be oligotropic or not. There has been a reluctance to note the year of capture; this should not be, because it will interfere with studies having in view the periodicity in the appearance of species.

The same speaker gave the following new records for Hymenoptera: *Bombus scutellaris* Cress. Four workers, Anglesea, N. J., viii, 8, 01, on Asclepias pulchra. (Vier.) *Tachytes breviventris* Cress. Clementon, N. J., viii, 27, 99 (Vier.). *Trypoxylon johnsoni* Fox. Riverton, N. J., vii, 15, 00 (C. W. Johnson). *Trypoxylon albitarse* Fab. Del. Water Gap, N. J., vii, 11, 99 (C. W. Johnson). *Mellinus bimaculatus* Say. Westville, N. J. (Fox). ♀ at Lucaston, N. J., ix, 17, 01 (E. Daecke). *Hoplisus phaleratus* Say. Del. Water Gap, N. J., vii, 8, 99 (C. W. Johnson). *Ammophila pictipennis* Walsh. Riverton, N. J., also Staten Island (W. T. Davis). See N. J. list. *Myzine interrupta* Say. Riverton, N. J., ix, 21, 02 (C. W. Johnson).

Dr. Calvert spoke of the value of such lists. Mr. Rehn mentioned the paucity of records for Orthoptera in the State. Mr. Snyder spoke of the value of putting the year of capture on all insects. Mr. Bradley suggested keeping year records for new finds. Mr. Rehn exhibited some Myremecophilous insects from Texas sent to him by Prof. Wheeler. He specially mentioned *M. nebrasaensis*, a small cricket, and *Attaphila*,

a genus of roaches, the type of a new sub-family. *Homœogamia bolliana* was also in the collection.

Mr. Laurent exhibited a specimen of *Exedrium halicarniæ* Streck. ♀ taken at Enterprise, Florida, by Dr. Castle and determined by Dr. Skinner, who said it might prove to be a large Southern ♀ form of *Ellema coniferarum*. In this case the genus and species would fall, but the name might be retained to indicate a variety.

Dr. Calvert stated that while the Southern mammals were smaller than those found North, in insects the case was often the reverse. He also said since describing *Telagrion daeckii* he had received a female specimen (unfortunately imperfect) from Prof. Needham. A specimen of *Lestes eurinus* was exhibited, which had been taken on Staten Island by Mr. W. T. Davis.

HENRY SKINNER, *Secretary*.

The 56th meeting of the Chicago Entomological Society was held in the John Crerar Library on Thursday, February 19, 1903. Thirteen members present.

The meeting was called to order by Vice-President Healy. Prof. Needham gave a very interesting talk on wing venation, illustrating his subject by sketches, charts and drawings. He spoke especially on the formation of wing cells in Neuroptera, and the variability of venation in the stone flies (Plecoptera).

Mr. Tower reported, on behalf of the Executive Committee, that application for membership, etc., in the Chicago Academy of Sciences, had been made in due course. Mr. Kwiat read the reply of the Academy, which stated, among other things, that "those who applied were elected to active membership, and permission was granted them to form a section."

Mr. Kwiat then read the By-Laws as drawn up by the Executive Committee. They were duly ratified.

After some informal discussion the meeting adjourned.

A. KWIAT, *Secretary pro tem.*

The March meeting of the Newark Entomological Society was held on the 8th, President Angelman presiding, and thirteen members present. The curator of Coleoptera reported

that there are 365 species (876 specimens) in the society's collection. Mr. Dickerson showed several pieces of wood in which wood-boring larvæ had worked and fallen prey to woodpeckers.

The genus *Hydræcia* was chosen as subject for next meeting's discussion.

After an informal talk on collecting prospects the meeting adjourned.

OTTO BUCHHOLZ, *Secretary.*

At the February meeting of the Feldman Collecting Social held at the residence of Mr. H. W. Wenzel, 1523 South Thirteenth Street, Philadelphia, thirteen persons were present.

Dr. Skinner spoke of a moth recently received by Mr. Laurent from Dr. Castle, which proved to be *Exedrium halicarniæ*. This makes a second record for the species, the present specimen having been taken at Enterprise, Florida, April 20. The subject was discussed by Messrs. Smith, Laurent, Skinner and Castle.

Prof. Smith stated that in mud received from ponds in South Jersey had been found mosquito eggs which hatched into larvæ. It was found that these eggs were hatching in water at a temperature below freezing point, in some cases it being necessary to break through the ice to make the investigations. These larvæ were apparently *Culex canadensis*, and were no doubt responsible for the early swarms of mosquitoes found in March and April.

Dr. Castle reported that he had found mosquitoes flying early this month at Riverton, N. J.

Mr. Johnson exhibited a species of *Psilota* taken at Manumuskin, N. J., April 28, by Mr. Daecke. Two species of this genus had been described by Mr. Macquart, but from doubtful localities. Mr. Daecke's specimen is *P. buccata;* and *P. flavipennis* had been taken at Round Mountain, Texas. The separating characters of the two species were described, of which the venation is the most important.

Mr. F. Haimbach was re-elected a member of the society.

WILLIAM J. FOX, *Secretary.*

EXCHANGES.

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N. A. Lepidoptera and their living pupa wanted. Will give in exchange exotic Lepidoptera.—Denton Brothers, Wellesley, Mass.

Will collect to order, next summer, insects of Guadalajara, Mexico.—J. F. McClendon, 3200 Guadalupe Street, Austin, Tex.

I have a complete set and index of Insect Life, also some odd numbers to exchange for works on Coleoptera not in my library.—L. H. Joutel, 164 East 117th Street, N. Y.

Lepidoptera—Odonata.—Wish to secure specimens of Butterflies and Dragonflies from North Carolina, of species not in my lists or collections. Correspondence invited.—Franklin Sherman, Jr., Dept. Agr., Raleigh, N. C.

Wanted.—North American *Geometridæ*, eastern and southern species (many of the commonest). Offered Lepidoptera, Coleoptera and Hemiptera, many good species, from British Columbia.—Geo. W. Taylor, Wellington, B C.

Catocala Andromache.—Will be supplied in exchange to a few of the larger collections while my duplicates last. O. C. Poling, Quincy, Illinois.

Please Notice.—After October 15th, 1902, my address will be College Station, Brazos Co., Texas.—E. Dwight Sanderson.

Wanted.—Geometers, named or unnamed, in exchange; also noctuids and Microlepidoptera.—Wm. H. Broadwell, 275 High St., Newark, N. J.

Desired.—Pupæ and perfect specimens of North American Lepidoptera, for cash or exchange. The Kny-Scheerer Co., Department of Natural Science, 225-233 Fourth Ave, N. Y. City, N. Y

Notonectidæ and Aquatic Hemiptera.—Wanted from New York State especially; and in general from the United States. Write me stating what you want in return. J. R. de la Torre Bueno, 437 Central Park West, New York.

Lepidoptera.—I have *Thecla spadix*, *Calephelis nemesis*, *Lyc. sornorensis*, *Pamphila errans*, *Hemaris thetis* and other California butterflies to exchange for *Lycænidæ* and *Bombycidæ*. Fordyce Grinnell, Jr., Box 1034, Palo Alto, California.

For Exchange.—Coleoptera of Southwestern Penna., in sets of four, with data for Coleoptera or Lepidoptera. Send lists, T. N. Brown, Uniontown, Pa.

Aphides.—I desire to obtain living aphides or plant lice. Can give named or unnamed Massachusetts insects of any order except Lepidoptera in exchange. C. T. Brues, Zoological Laboratory, Columbia University, New York City.

Wanted.—Cerambycidæ (Longicorns) of the Americas. State number, price and locality. Fred. C. Bowditch, 164 Rawson Rd., Norfolk Co., Mass.

Coccids and Bees.—Correspondents are requested not to send me specimens for identification without first asking permission. My time is very limited, and I cannot work up all sorts of miscellaneous material. —T. D. A. Cockerell, East Las Vegas, N. M.

Pupæ Exchange.—Crysalids of H. Maia and others; also cocoons to exchange for other native pupæ and cocoons. W. T. Buxton, 152 Walnut St., Somerville, Mass.

Wanted.—Cocoons *Attacus angulifera, ceanothi, gloveri, A. luna, E. imperialis*, to exchange for butterflies and moths. *Catocala* in papers from Illinois.—Adolf Mares, 1671 W. 23d St., Chicago, Ill.

Wanted, by purchase or exchange, photographic prints and lantern slides illustrative of insect life.—W. L. W. Field, Milton, Mass.

Diptera.—*Rhamphomyia* of the world wanted. Will exchange for Texas or Illinois insects (not Lepidoptera).—A. L. Melander, The University of Chicago.

Tortricidæ, Tineidæ and **Pyralidæ**.—I will identify specimens of these subfamilies, from all N. Am. localities, for privilege of examination and records. Genera and specific names per Dyar's Catalogue. Will also exchange.—W. D. Kearfoot, 114 Liberty St., New York, N. Y.

Wanted.—December, 1899, Entomological News. Address F. W. Friday, 17 Grace St., Pittsburg, Pa.

Wanted.—*Catocala* and *Sphinx* of the Northwest and Southwest in exchange for other native exotic and European butterflies and moths. Send list to Chas. F. Timm, 131 Ralph St., Brooklyn, N. Y.

Exchanges solicited in moths, butterflies of N. America. Catocalas preferred. Send lists to Jos. H. Reading, 775 N. Rockwell St., Chicago, Illinois

Lepidoptera from all parts of the world to exchange for species not in my collection.—Frank Haimbach, No. 1309 Allegheny Avenue, Philadelphia, Pa., U. S. A.

North American Butterflies wanted in exchange for Lepidoptera of Southern California.—P. H. Hart, Pasadena, Cal.

Butterflies for exchange. Expect to have limited number of *Œneis chryxus, P. smintheus, Basilarchia wiedemeyeri* and others during summer. Send lists of what you have.—A. M. Hendee, Central City, Colo.

Lepidoptera.—Fertile eggs of *Argynnis diana* wanted.—John Ruston, 10 Carlton Road, Workrop, Nottingamshire, England.

Will collect in all orders. Would like named or unamed Coleoptera in exchange. Please write to G. Chagnon, P. O. Box 186 Montreal, Can.

Moths of Pennsylvania and New Jersey. The undersigned will give good exchange in cash or specimens for moths of Pennsylvania and New Jersey that are new to his collection. Send list of rare species only.—Philip Laurent, 31 East Mt. Airy Ave., Philadelphia, Pa.

Wanted.—Sphegidæ of North America, Mexico and the West Indies (as included in Cresson's Synopsis) for study in connection with a revision of the group. Material sent will be returned named as far as possible.—H. T. Fernald, Amherst, Mass.

I will give Lepidoptera, publications or cash, for Smith's "Monograph of the Sphingids," published in Vol. xv, Trans. Ent. Soc., Acad. Nat. Sciences, 1888.—H. H. Newcomb, 35 Court St., Boston.

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